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The Strategic Weapons Spiral: Soviet Reactions to US Initiatives?

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Preface

Information available as of 15 August 1983 was used in the preparation of this Memorandum.

The crux of the matter is that the USSR has on no occasion initiated the development of new types of weapons, and [has] produced them only as a response to their appearance in the United States.

—*How To Avert the Threat to Europe*
Moscow 1983

The Soviets have long characterized their strategic nuclear programs as reactions to the US initiatives that have fueled the arms race, and as necessary to prevent the United States from achieving its goal of strategic superiority over the USSR. [redacted] 25X1

The relationship of US and Soviet strategic developments is complex. At the level of grand strategy, there is clearly an action-reaction pattern. Western concepts of containment and military planning have been mainly reactions to Soviet expansionist objectives. The Soviets' strategy and their military developments have been in large part intended to break out from what they have perceived as Western encirclement. At the level of military strategy and plans, strategic defenses of either side are obviously reactions to the other's perceived offensive capabilities. [redacted] 25X1

In their strategic programs, the two sides have also followed different paths. US strategic forces, influenced by World War II experience, began with an emphasis on strategic bombers, and for a number of reasons, not all of them related to the Soviet threat, developed a roughly balanced triad of nuclear forces. The Soviets, with their continental land warfare orientation, have given primary emphasis to land-based ballistic missiles. The long-range plans for both sides' strategic forces, in numbers and characteristics, were set down in the late 1950s and early 1960s. After surging ahead of the Soviets, the United States faltered in the 1970s. The Soviets adhered to their plans for continuing modernization, unaffected by US unilateral restraint and only modestly restrained by arms limitation agreements. [redacted] 25X1

Recently, in their efforts to slow or halt US and NATO strategic force modernization programs, the Soviets have stepped up their rhetoric in the media and in official communications about US initiatives as the cause of the arms race. They have become more specific in pointing out their capabilities to match the United States, program for program, and have

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become more threatening in asserting their intentions to do so; they are also asserting that they can now compete as an equal in weapons technology. Their propaganda campaign, carrying a simple, easily understood message, has had some effect in furthering their cause.

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It is difficult to refute the Soviets' claims about the nature of the arms competition in a public forum since information on their weapons plans and programs—which are conceived, decided upon, and developed in total secrecy—is also considered classified in this country. Because US programs often reach public awareness early in their development (years before comparable Soviet programs), major US weapons appear to predate similar Soviet systems, giving support to Soviet assertions of having to react to US initiatives. Analysis of intelligence on Soviet strategic programs conveys a situation quite different from Soviet claims. The lack of awareness of the falsity of these Soviet claims is a major competitive advantage for the Soviets in their efforts to restrain US weapons programs.

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The Strategic Weapons Spiral: Soviet Reactions to US Initiatives?

Introduction

Proposals for new weapons programs in the United States invariably draw heated propaganda from the Soviet Union as being the start of another round of the "arms race," to which they must reluctantly respond. This message, which is echoed in the West, uses new weapons programs as a metaphor for the "arms race." This formulation works to the advantage of the Soviets since the initiation of their programs is shrouded in secrecy, and it disregards other indicators of the Soviets' military effort—budgets, numbers, weapon procurement rate, and level of research and development.

With the implementation of the present US strategic force modernization program, Soviet propagandists have trumpeted new warnings about US stimulation of a new action-reaction cycle of the arms race. A new twist has been added to their rhetoric: they are buttressing their claims of US action–Soviet reaction by ticking off specific Soviet weapons, such as the SS-X-24, the Typhoon, and the cruise missile that were developed supposedly in response to specific US weapons. They are also threatening that they will continue to copy our weapons. According to Defense Minister Ustinov, "The economy, science, and technology of the Soviet Union have attained such a level that they can guarantee the creation of any kind of weapon that our enemies wish to gamble on."

takes the claim a bit further. He has stated that, unlike in the past, Soviet programs will not lag behind those of the United States by five to seven years; instead they will be simultaneous.

The purpose of this Memorandum is to evaluate the Soviets' claims that they are reacting to US initiatives based on what we know from intelligence sources about their strategic offensive weapons in development and testing. It addresses Soviet competition with the United States in weapons technologies and Soviet programs to acquire weapons like those the United States has proposed or developed. It also addresses those initiatives by the Soviets that do not appear in their propaganda about arms race and action-reaction cycles—that is, a host of other programs for strategic offensive weapons that have no US counterparts. The Memorandum does not address the many factors other than US weapons developments that figure in Soviet force planning—economic and political factors, or military factors such as force restructuring and command, control, and communications improvements. Nor does it assess the adjustments in defenses resulting from the appearance of new offensive weapons, and the cycle of countermeasures and counter-countermeasures in both sides' weapons design.

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Competition in Weapons Technology

The United States is generally recognized as being in the forefront in research of many weapons technologies. In some important cases, however, (for example, ICBMs, H-bomb, Sputnik, liquid-propellant SLBMs) the Soviets have successfully taken technology paths independent from those of the United States. In many areas, however, the Soviets pursue efforts similar to those in the United States. Their pursuits, aided by a well-organized, centrally directed, overt and covert technology acquisition program, have not been reluctant reactions to US initiatives, as the Soviets would have us believe. Rather, the Soviets' access to the results of successful technological developments by the United States has eased their technology choices and shortened their weapon development times.

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The Soviet military R&D organizations are aware of most US weapons programs and technologies at a very early stage in development, and they are imbued

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with a strong sense of technical competition in developing comparable systems. This competition is supported by a political leadership committed to a doctrine which has espoused the necessity for Soviet "military-technical superiority" over the West. In a speech not long before his death, Brezhnev said, "Competition in military technology has sharply intensified, often acquiring a fundamentally new character. A lag in this competition is inadmissible."

The Soviets require that every major civilian or military project be measured against the best foreign technology before it is approved to proceed. Once a project is in development, government standards require the continued comparison of the characteristics of hardware, at different design stages, with similar Western hardware. competition with the United States is a primary aspect in the development of Soviet missile technologies:

- A "priority factor" in the development of Soviet missiles is competition with US missiles, in terms of their characteristics.
- Each generation of missiles has to "keep pace" with foreign technology achievements.
- By the beginning of the 1960s, Soviet missile designers were assigned the "most important national task" of developing missiles superior to US missiles in terms of their basic characteristics.

Defense Minister Ustinov has claimed publicly that their new ICBM, the SS-X-24, will not be inferior "in any way" to the MX. Despite such claims, the Soviets almost certainly do not realistically expect to match the United States in weapons technologies across the board.

With their access to many details of US weapons, and a relative lack of competition within the Soviet R&D community, Soviet designers are, in effect, competing with US weapons designers. US system characteristics are used as a yardstick against which Soviet technical capabilities are judged and presumably, decisions made.

Development of Comparable Weapons Systems

Intelligence on development of Soviet systems that are counterparts to those of the United States conveys a different impression than the Soviets' claim that they are simply reacting to US initiatives. Using their responsive, centrally planned R&D establishment and with virtually unrestricted access to many details of our future weapons, the Soviets apparently program some counterpart weapons systems to be developed and appear at about the time our systems appear. Such systems might have been developed without the stimulus of a US program, as the Soviets exploit the latest technology to improve their weapons. They also claim as responses similar Soviet systems that were already under way when US programs were authorized. The result of this process is a Soviet "counterpart" to every major strategic weapons system the United States has in a publicized development or deployment program, with the probable exception of the Stealth bomber.

Table 1 compares US systems now in development with "counterpart" [1] Soviet systems.

[1] It is often not possible to infer from comparing the developmental history of US and Soviet weapons whether a US program was responsible for the start of any particular Soviet program We often have to judge when Soviet programs were initiated However, this method allows a reasonable estimate of when a development program was initiated because of the orderliness and bureaucratic rigidity in the Soviet weapon acquisition process.

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Table 1
Soviet Systems Under Development
With US Counterparts

US System	IOC [a] Advantage	Soviet "Counterpart"	Estimated Soviet Start Date [b]
MX	Soviet	SS-X-24 [c]	
Pershing II	US		
Trident C-4/Ohio	US	SS-NX-20/Typhoon [c]	
Trident D-5	Soviet	SS-NX-20 Follow-on [c]	
ALCM	US	AS-X-15 [c]	
GLCM	US	SSC-X-4 [c]	
SLCM	Soviet	SS-NX-21 [c]	
B-1	US	Blackjack A [c]	
Stealth bomber	US		
Modified B-52 for ALCM	US	New Bear variant for ALCM	

[a] Initial operational capability.
[b] Estimated year of development decision by the Politburo.
[c] Claimed or implied as a response by the Soviets.

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Some may be responses, some clearly are not:

- The Soviet programs for the Typhoon submarine and its SS-NX-20 SLBM, Blackjack bomber, and long-range cruise missile probably began development after comparable US programs. Although on this basis the Soviet weapons can be categorized as "responses," we do not know how long the Soviet systems were under consideration prior to program initiation or the actual reason for their initiation. They are weapons systems that the Soviet military could justify as needing on the basis of their requirements, regardless of the status of US programs for similar systems, and they have followed a normal development process. Justification for the systems was made much easier because the United States was developing like systems.

- The SS-X-24 and the SS-NX-20 follow-on missiles are clearly not responses to US program initiatives. The Soviet systems were decided upon, began their development, and will be deployed prior to the US MX and D-5 missiles to which the Soviets claim they are responses. The concept of both US missiles was well publicized, however, prior to the US decision to begin their actual development.

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- The system that responds to the Pershing II is not yet clear. In March of this year, Soviet Central Committee member Zagladin stated that if the P-II is deployed, the Soviets would have to deploy an equivalent missile. A modified version of the MIRVed SS-20 IRBM was tested once in February prior to the Zagladin statement, but not since. This system the only "new" intermediate-range ballistic missile in flight-testing, is apparently the result of an unusually high-priority preflight development program. Development probably began at about the time of the 1979 NATO decision on INF deployments, but we are not confident about the relative dates. At one point, the developers were probably working on the missile on an around-the-clock basis. The apparent objective was to quickly reach flight-testing, so that it could be available to provide, as an option, a possible Soviet claim that

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they have developed a missile in response to P-II. There are disagreements within the Intelligence Community, however, about this interpretation of development program. 25X1

In the USSR, the very existence of programs to develop weapons systems, let alone their technical and operational details, are state secrets. Secrecy allows them the advantage of being able to control when and how to play the US action–Soviet reaction story that best fits their political needs. For example, the Soviets have had programs under way since the early 1970s to develop long-range land-attack cruise missiles. The fact of their existence was not made public until late 1982, when they were well into flight-testing. By delaying the announcement until then, the Soviets were able to sharpen their "reaction" claim and also give the impression of being a technological "sleeping bear" that, when aroused, can quickly develop any system the United States has. They will similarly control information concerning deployment of the cruise missiles until and unless their deployment plans can be played for maximum political advantage in the INF arena. Also, if it serves the Soviets' political ends, systems that are not necessarily equal in capability to US systems will be played as if they are.

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Curiously, the Soviets do not normally publicize the existence of their counterpart systems—and hence potential bargaining chips—until both nations' systems are in the full-scale development phase. This could reflect the normal secrecy the Soviets attach to their programs. It could also reflect a reluctance by the Soviet military to offer to give up a new system, even if it could lead to halting an important US program. has noted that, once started, Soviet programs are hard to stop because people develop vested interests in them.

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Soviet Rationale for Developing Some Similar Weapons

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The Soviets' primary reason for developing strategic weapons systems is to meet the military requirements of their strategy for nuclear conflict, which of course includes consideration of existing and likely future military capabilities of all their potential adversaries. In developing some systems that are similar to those of the United States, the Soviets probably have other motivations, including:

- To assure program approval. Programs for weapons like the United States is developing are probably easier to get authorized than those for weapons of unique Soviet design.
- To portray themselves as being the technological equal of the United States. Their leaders have historically had a technological inferiority complex.
- To hedge against a US technological breakthrough. The Soviets are paranoid about US potential for technological breakthrough and probably routinely work on anything the United States is interested in.
- To take advantage of US technical progress. Developmental problems are eased by knowledge of US technology and the technical requirements the United States is working to fulfill. They can save time, money, and uncertainty by having the United States make the appropriate design and technology choices, especially if they can then obtain information or hardware through technology transfer. Also, it is easier for the Soviets to measure qualitative progress against a similar system.
- The inherent potential of such systems for use as arms control bargaining chips.
- To support Soviet propaganda. The United States can be accused—using selective examples—as being the initiator of the arms race.

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Soviet Systems With No US Counterparts

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The entire Soviet formulation of action-reaction conveniently disregards a salient aspect of their weapons procurement policy—they simply develop far more weapons than we do. This was particularly evident in the 1970s and continues today. In addition to the

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Table 2
Soviet Systems Under Development With No US Counterparts

System	Estimated Start Date	Estimated Availability for First Flight-Test
SS-X-25 ICBM		February 1983
Improved SS-18 ICBM		1983?
Improved SS-19 ICBM		1983?
Improved small solid ICBM		1983?
Small solid		1984-86
Improved SS-20		1984
SS-18 class		1987
Large GLCM		December 1981
Large SLCM		Fall 1983
SLBM		June 1983
		1987
Improved SS-NX-20 with MaRV		1987-90

systems listed in table 1, the Soviets have at least 10 other new or modernized missiles in development for initial testing in the 1980s, which they do not talk about. These systems, listed in table 2, cannot be claimed as copies of US systems or as reactions to US initiatives because there are no US counterparts. The array of systems provides a compelling case against the Soviet claim of being caught up in the strategic weapons spiral by US challenges.

The SS-X-25 missile currently in testing will probably be initially deployed in 1985 in silos, in 1986 in a mobile mode; It is the latest in a series of Soviet land-mobile ICBM programs, dating back to the early 1960s. In contrast, the smaller US Midgetman, a recent proposal, is being developed for possible deployment in the early 1990s. The Soviets are already making claims about the need to respond to it.

The Soviets have been trying to stop the deployment of the US MX, D-5, and cruise missiles, and now Pershing II, in part by threatening to deploy counterpart systems. The Soviets have proposed that in exchange for halting US weapons deployments they would not deploy similar systems which have already been revealed to the public. This approach is appealing to those who believe it would halt the strategic weapons spiral, and reinforces their notion that the United States must be at fault. It is evident, however, that even if the Soviets did not deploy systems about which the public has knowledge, in trade for stopping their US counterparts, they would still have a large number of other missile improvements under way. It is also evident that they will only go public with information about their "counterpart" systems claimed to be developed in "reaction" to US programs, and not about the rest of their strategic weapons programs.

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Their SLBM development effort provides a case study of how the Soviets attempt to use the secrecy of their programs to their advantage in the arms control arena. They have four programs under way: a solid-propellant, MIRVed SS-NX-20 follow-on system for the Typhoon SSBN, to be deployed in 1988; a second SS-NX-20 follow-on and two liquid-propellant SLBMs to be deployed in 1985 and 1989 on Delta-class SSBNs. The Soviets would be willing to forgo the SS-NX-20 follow-ons for nondevelopment of the US D-5, while retaining their programs for new liquid-propellant SLBMs. Until recently, such considerations were implicit in their START proposals on future SLBM modernization. The first of the liquid-propellant systems will have range and throw-weight characteristics similar to, or greater than, the US C-4; the second may be similar in size to the D-5. These two systems would offer the Soviets significant advantages over the United States if the D-5 is not deployed; at least 17 Soviet SSBNs could be equipped to carry them. They cannot tout these systems as a "response" to US programs, since a public dialog about the extent of their efforts would hurt their effort to stop or limit D-5 deployments. In June, the Soviets backed off their position in START, which would have disallowed the D-5 and the improved SS-NX-20. This change, showing greater "flexibility" regarding deployment of the

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D-5, may also have been intended to deflect additional criticism of the Soviet approach to arms control. Later that same month, they conducted flight test of the first of their new liquid-propellant SLBMs. The sudden Soviet "flexibility" on the SLBM modernization issue would therefore seem to be related

Quantity vs. Quality: Problems Ahead?

Unfortunately, comrades, as you all know it is the introduction of the achievements of science and technology into practice that is a snag for us.

—Yuri Andropov, June 1983

While more appropriate for Soviet civilian industry, Andropov's statement at the June 1983 party plenum also has relevance for defense programs. The Soviet military R&D organizations have probably become more capable in developing high-technology weapons systems than industry has become in producing them. If the Soviets plan to produce Western-style high-technology weapons systems in Soviet-style quantities, they could have serious problems. Soviet industries lack the capability to produce highly sophisticated weapons systems. The Soviets are apparently focusing their foreign technology acquisition efforts on production technologies. Also, many of the more recent Soviet programs, including the Typhoon submarine, the SS-N-18 SLBM, the SA-10 surface-to-air missile system, and the Backfire C bomber, have encountered production-related problems.

The traditional requirement to have quantities of forces equivalent to the combination of all potential adversaries—which they have been able to fulfill in the past—has led the Soviets to make large-scale producibility a key restraining factor on the level of technology incorporated in their systems. Now, however, they seem committed to deploy systems at the same time and with the same quality as Western systems. This commitment to both quantity and quality may be stressing Soviet defense industry as today's high-technology systems reach the production stage. Therefore, more capable future Soviet weapons will probably be produced in smaller quantities than has been the case, and quality control problems may lead to delays and to maintenance woes.

Implications

- The Soviets have far more weapons programs under way than we do and are committed to military-technical superiority over the West in their weapons planning and procurement policy.
- They apparently feel that every US strategic weapons system must have a Soviet counterpart. Even so, most will be justified primarily on grounds of military requirements. Some weapons systems, independently being developed in support of normal Soviet military requirements, will be claimed as reactions. Still others may in fact be reactions to US programs. Historical precedent and programs now under way strongly suggest that actual mirror-image programs will be part of the motivations for Soviet weapons developments.
- Any proposal by the Soviets to give up an analogous program to halt a US deployment will probably mean they have under wraps another system that can perform a similar mission.
- The apparent requirement for responses to US programs may mean that the Soviets could be susceptible to deceptive efforts that indicate that we are succeeding in developing advanced technological concepts or weapons systems, and could be vulnerable to US cost-imposing strategies
- Deployment of high-technology weapons to match those of the United States will probably contribute to smaller production runs than has been the traditional Soviet preference, and may also lead to more widespread production and maintenance problems.